

Report of the Month

These twin IO-520 engines are wearing differently. Can you figure out why?

To learn more about where the elements are coming from, [click here](#).

Left engine

ELEMENTS IN PARTS PER MILLION	MI/HR on Oil	37	42	41
	MI/HR on Unit	1,294	1,188	1,118
	Sample Date	12/01/09	06/29/09	04/17/09
	ALUMINUM	13	13	12
	CHROME	8	12	18
	IRON	47	54	66
	COPPER	11	13	15
	LEAD	6155	5877	5229
	TIN	7	5	4
	MO LYBDENUM	9	11	10
	NICKEL	29	13	41
	PO TASSIUM	1	1	0
	BORON	1	1	0
	SILICON	9	18	23
	SODIUM	2	0	1
CALCIUM	2	4	3	
MAGNESIUM	1	1	1	
PHOSPHORUS	1053	1107	904	
ZINC	5	7	6	
BARIUM	0	0	0	

Right engine

	37	42	41
	1,294	1,188	1,118
	12/01/09	06/29/09	04/17/09
	18	9	10
	22	8	8
	160	83	74
	14	8	7
	8565	8444	7592
	4	3	1
	10	6	5
	58	17	15
	0	0	0
	1	1	0
	6	5	5
	1	0	0
	2	5	3
	1	1	2
	966	1048	969
	4	8	6
	0	0	0

PROPERTIES	SUS Viscosity @210°F	89.8	98.1	89.0
	cSt Viscosity @ 100°C	17.92	19.90	17.75
	Flashpoint in °F	465	460	465
	Fuel %	<0.5	<0.5	<0.5
	Antifreeze %	-	-	-
	Water %	0.0	0.0	0.0
	Insolubles %	0.4	0.4	0.4
	TBN			
	TAN			
	ISO Code			

	95.4	93.6	93.0
	19.26	18.84	18.71
	470	475	455
	<0.5	<0.5	<0.5
	-	-	-
	0.0	0.0	0.0
	0.5	0.3	0.4

These twin engines are wearing differently, which makes it easy to see when one has a problem. In this case, the right engine was wearing about the same as its partner in early 2009. As time went on, the right engine started looking worse. For the 12/01/09 sample, the right engine had zero compression on cylinder #2 due to a suspected valve problem. Work was done immediately to replace the cylinder, though over the next few months, iron continued to read high. Compressions are a little lower they'd be ideally, but they've remained within Continental's guidelines so the owner is just monitoring the engine for now.